

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001284**Date Inspected:** 03-Jan-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 2300**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Xu Le Feng, Chen Xi**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Caltrans Mock-Up**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Ken Jobes, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, to randomly monitor welding and Quality Control (QC) functions. While on site, the QA Inspector observed and/or discovered the following:

The Caltrans QA Inspector randomly observed the manual Shielded Metal Arc Welding (SMAW) on the 77M Mock-Up Diaphragm Assembly, Weld Nos. MUSA-SA104 A/B-3 and 4. Both welds were made by Tan Xiangbo (I. D. 066459), whose qualifications for this welding are listed in ZPMC's Master List of Welders/Welding Operators/Tack Welders, Revision 7. ZPMC CWI, Xu Lenfeng (CWI No. 07031411) was present during this welding.

The Caltrans QA Inspector also randomly observed the manual Shielded Metal Arc Welding (SMAW) on the 77M Mock-Up Diaphragm Assembly, Weld Nos. MUSA-SA95 -9 and 10. Both welds were made by Ge Hongai (I. D. 037780), whose qualifications for this welding are listed in ZPMC's Master List of Welders/Welding Operators/Tack Welders, Revision 7. ZPMC CWI, Xu Lenfeng (CWI No. 07031411) was present during this welding.

The Caltrans QA Inspector also randomly observed the manual Shielded Metal Arc Welding (SMAW) on the 77M Mock-Up Diaphragm Assembly, Weld Nos. MUSA-SA95 -3 and 4. Both welds were made by Cao Tao (I.D. No. 066163), whose qualifications for this welding are listed in ZPMC's Master List of Welders/Welding Operators/Tack Welders, Revision 7. ZPMC CWI, Xu Lenfeng (CWI No. 07031411) was present during this welding.

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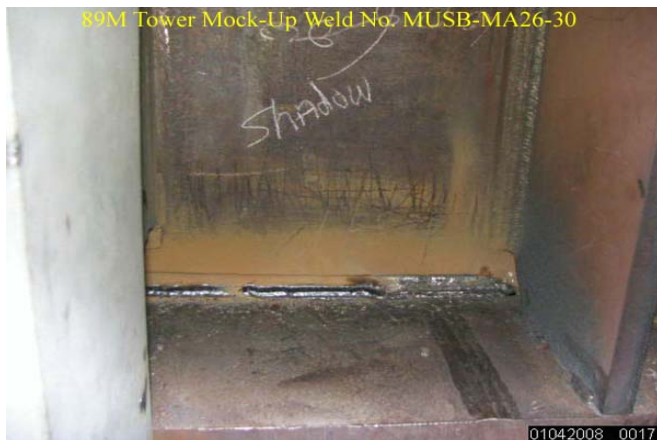
The Caltrans QA Inspector also randomly observed the manual Shielded Metal Arc Welding (SMAW) on the 77M Mock-Up Diaphragm Assembly, Weld Nos. MUSA-SA104 A/B-9 and 10. Both welds were made by Liang Yanhai (I. D. 066457), whose qualifications for this welding are listed in ZPMC's Master List of Welders/Welding Operators/Tack Welders, Revision 7. ZPMC CWI, Xu Lenfeng (CWI No. 07031411) was present during this welding.

All eight of the above welds were made using Welding Procedure Specification WPS-B-T 4313-TC-P4-1 for partial joint penetration (PJP) welds being welded in the vertical groove (3G) welding position. The QA Inspector noted that documentation of preheat/interpass temperatures, voltage, amperage and travel speed by the CWI were within the specified ranges of the WPS up until the time of random observation. The QA Inspector also randomly measured the amperage and voltage by use of a calibrated Fluke amp/volt meter. The specified electrode, 4.0 mm diameter THJ506-Fe-1 (E7018-1) was being used and portable electrode ovens were in use. One observation was made early in the shift and another observation later in the shift.

It was noted by the QA Inspector that ZPMC examined each of the above root passes using magnetic particle examination (MT) between shifts and then welded one additional pass on each weld before the next shift had opportunity to witness the MT and/or verify acceptance by performing follow-up MT.

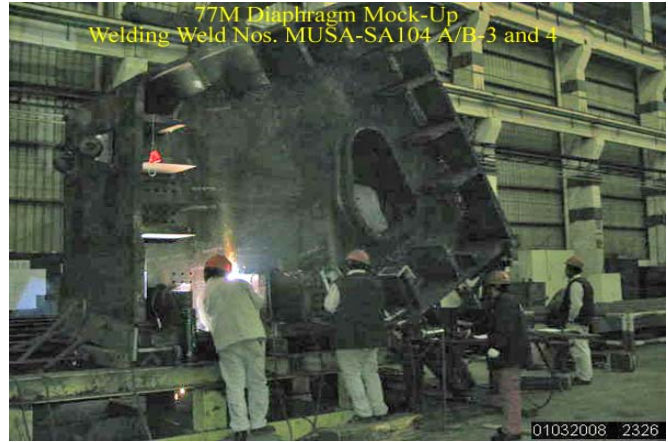
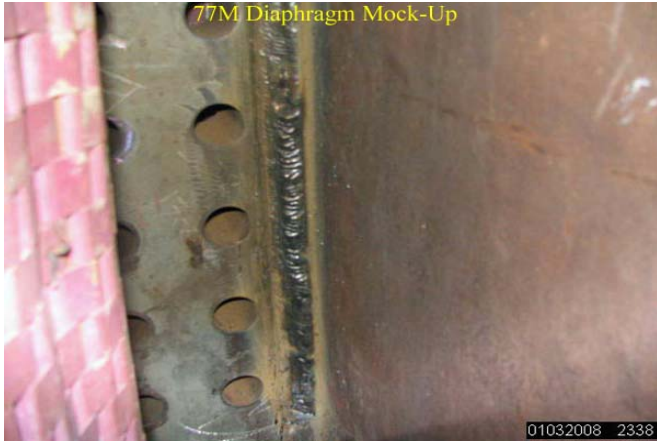
The Caltrans QA Inspector also randomly observed the manual Shielded Metal Arc Welding (SMAW) on the 89M Tower Mock-Up, Weld No. MUSB-MA26-30A-1. The welder was Dai Lu (I. D. 048659), whose qualifications for this welding are listed in ZPMC's Master List of Welders/Welding Operators/Tack Welders, Revision 7. ZPMC CWI, Chen Xi (CWI No. 07072021) was present during this welding. Welding Procedure Specification WPS-B-T 3212-TC-U5b for complete joint penetration (CJP) welds being welded in the horizontal groove (2G) welding position. The QA Inspector noted that documentation of preheat/interpass temperatures, voltage, amperage and travel speed by the CWI were within the specified ranges of the WPS up until the time of random observation. The QA Inspector also randomly measured the amperage and voltage by use of a calibrated Fluke amp/volt meter. The specified electrode, 4.0 mm diameter Excalibur 9018M 4HR was being used and a portable electrode oven was in use.

All observations appeared to meet the requirements of the job specifications.



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Summary of Conversations:

As identified within the contents of this report.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Jobes, Kenneth
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Quality Assurance Inspector

Reviewed By:	Cochran, Jim
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QA Reviewer
